

**WE CLAIM:**

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1. A method of growing a SiC film within an MBE system having a growth chamber and effusion cells having shutters, comprising the steps of:
- charging a first crucible with a quantity of Fullerenes;
  - installing said first crucible into a first effusion cell;
  - placing said first effusion cell into the growth chamber;
  - coating a second crucible with a layer of SiC;
  - charging said second crucible with a quantity of solid Si;
  - installing said second crucible into a second effusion cell;
  - placing said second effusion cell into the growth chamber;
  - providing a SiC substrate;
  - preparing said substrate;
  - loading said substrate into the growth chamber;
  - evacuating the growth chamber;
  - heating said substrate;
  - heating said first effusion cell;
  - heating said second effusion cell; and,
  - growing a homoepitaxial layer of SiC upon said substrate by controllably actuating the effusion cell shutters.
2. The method of claim 1 wherein said substrate is heated to a temperature of about 1500° C.
3. The method of claim 1 wherein said first effusion cell is heated to a temperature range of about 500° C to 650° C.
4. The method of claim 1 wherein said second effusion cell is heated to a temperature above about 1500° C.
5. The method of claim 1 wherein said substrate is prepared by chemical-mechanical polishing.
6. A method of growing a SiC film within an MBE system having a growth chamber and effusion cells having shutters, comprising the steps of:
- charging a first crucible with a quantity of Fullerenes;
  - installing said first crucible into a first effusion cell;
  - placing said first effusion cell into the growth chamber;

coating a second crucible with a layer of SiC;  
 charging said second crucible with a quantity of solid Si;  
 installing said second crucible into a second effusion cell;  
 placing said second effusion cell into the growth chamber;  
 providing a SiC substrate;  
 polishing said substrate;  
 cleaning said substrate;  
 etching said substrate;  
 rinsing said substrate;  
 drying said substrate;  
 loading said substrate into the growth chamber;  
 evacuating the growth chamber;  
 heating said substrate to a temperature of about 1500° C;  
 heating said first effusion cell to a temperature range of about 500° to 650° C;  
 heating said second effusion cell to a temperature above about 1500° C; and,  
 growing a homoepitaxial layer of SiC upon said substrate by controllably  
 actuating the effusion cell shutters.